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Mark Levy
SALZMAN & LEVY
19 Chenango St., Ste. 902
Binghamton, NY 13901

EXAMINER

MOORE, MARGARET G

ART UNIT

1712

PAPER NUMBER

6

DATE MAILED: 10/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

TC-6

Office Action Summary

Application No.

09/781,631

Applicant(s)

PAPATHOMAS, KONSTANTINOS

Examiner

Margaret G. Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31 to 70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31 to 70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. Claims 35, 36, 54, 56 and 66 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant has failed to indicate where support can be found for these claim limitations, and since the Examiner cannot find support, they are considered to be new matter.

As amended in claims 35, 56 and 66 the epoxy resin is selected from the group of epoxy resins consisting of polyimides, cyanate esters and combinations thereof. The specification fails to teach such a group of epoxy resins. See pages 3 and 4.

In claim 36, the Examiner cannot find support for the limitation "at least one aliphatic polyol substance of between approximately 0 and 2 percent". See for instance page 9.

In claim 54, the Examiner cannot find support for this limitation as it applies to a ceramic substrate. See the top of page 2 in the specification.

2. Claims 41 and 42 to 51 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

With regards to claims 41, 43 and 48, this rejection is consistent with that made against claims 3 and 23 in the previous office action. Specifically, the specification fails to describe or contain this limitation and there is nothing in the specification that would enable one having ordinary skill in the art to arrive at this limitation. The fact that TANG et al. cites a standard for core/shell particles does not make applicant's specification enabling for making a composition having a toughness within the claimed range. Applicant's response does not address the fact that this limitation is absent from the specification.

With regards to claims 42 to 51, the Examiner notes the rejection of claims 11 to 20 in paragraph 1 of the previous office action. Applicant has not addressed this rejection and as such it is maintained, as it instantly applies to claims 42 to 51.

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3. Claims 41, 43 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rationale for this rejection is consistent with that noted in paragraph 2 of the previous office action. Applicant's response states that TANG et al. recites the "standard for core/shell particles" and that the tests have been performed to the same standards. However, this limitation is drawn to the composition rather than the core/shell particle. Since it is unclear how the composition's "toughness" is measured, and there is nothing indicating that the skilled artisan would have known how toughness is measured, it is unclear what is embraced by these limitations.

4. Claims 37, 54, 57, 58, 67 and 68 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

For claim 37, limiting the epoxy resin to a cycloaliphatic epoxy resin is not considered to be further limiting of claim 35 since a cycloaliphatic epoxy resin is not an epoxy resin selection in claim 35.

For claim 54, reference to "said ceramic substrate" lacks antecedent basis and thus it is unclear how this claim is considered to be further limiting.

For claims 57, 58, 67 and 68, reference to "said epoxy resin" lacks antecedent basis and thus it is unclear how this is considered to be further limiting.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the

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treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 31 to 33, 35, 37, 38, 42, 45 and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Tang et al.

The Examiner relies on rationale consistent with that noted in the previous office action, paragraph 8, for this rejection as it presently applies. The Examiner will not go into significantly further detail about the teachings of Tang et al., since applicant has provided only the briefest of replies to this rejection. For instance, in addressing the teachings of Tang, the response only notes the core-shell aspect. Many of the claims that were and are rejected as being anticipated by Tang et al. do not contain a core-shell particle.

However, regarding that which applicant does argue about Tang et al., the Examiner finds this unpersuasive of novelty. Applicant asks the Examiner to "note that Tang et al. uses a crosslinked polymer for the shell and claims a $T_g < 0^\circ\text{C}$ ". It is then concluded that "this is exactly opposite to what applicant is doing". However it is the *core* in Tang et al. that has a T_g of < 0 , not the shell. The shell in the exemplified particles has a T_g above room temperature. This is not the opposite of what is claimed; *this is what is claimed* in the particles of claim 31.

8. Claims 41 and 43 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tang et al.

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9. Claims 34, 36, 39, 40, 44, 47 to 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang et al.

The Examiner relies on the rationale detailed in paragraphs 9 and 10 of the previous office actions, as it presently applies to these claims. Since applicant has provided no specific traversal of the obvious and/or inherency rationale, this is maintained.

10. Claims 31, 32, 34 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Usui et al.

The Examiner relies on the same rationale noted in paragraphs 11 to 13 of the previous action as it presently applies. Applicant only traverses this rejection by stating that "a similar argument may be applied to the Usui et al. reference" (as is applied to Tang et al.), but in Tang et al. applicant mischaracterizes the T_g values. In Usui et al., the T_g of the shell is 70 °C or higher, meeting the glass transition temperature limitation of claim 31. Also, polybutadiene has a T_g that is less than room temperature, and thus the core in Usui et al. also meets the claimed core T_g limitation.

11. Claim 41 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Usui et al.

12. Claims 52, 54 to 56, 62, 64 to 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usui et al.

The Examiner relies on the same rationale noted in paragraphs 11 to 13 of the previous action as it presently applies. Since applicant has not traversed this rationale, it is maintained.

13. Claims 42, 44 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanyu et al.

The rationale for this rejection is consistent with that given in paragraph 5 of the previous office action. Applicant traverses this rejection by stating that Hanyu et al. do not teach the purpose of this invention. However, surely applicant is aware that the

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future intended use of a composition does not provide novelty to a composition that is already known for a different purpose. Since each component required by the claimed composition is met by Hanyu et al., this rejection is maintained. For the record, the Examiner notes that she improperly referred to Example 13 in Hanyu, when Example 18 was a better example of an anticipatory composition.

14. Claim 43 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hanyu et al.

15. Claims 45 and 47 to 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanyu et al.

The Examiner relies on the same rationale noted in paragraphs 6 and 7 of the previous action as it presently applies. Since applicant has not traversed this rationale, it is maintained.

16. In conclusion, the Examiner notes that she does not believe that a "shot gun" examination approach was taken, or that the previous office action could be considered such. Each claim that was rejected was specifically rejected under 102, 102/103 or 103, the claim limitations addressed and passages and relevant examples were cited from the prior art references. In response to this office action applicant has provided broad arguments that do not apply to all the pending claims (details regarding the core/shell particle in Tang et al. have nothing to do with the rejection of previous claim 11 or instant claim 42 which contain no such particle), and arguments that provide only a passing mention to a specific reference (applicant's traversal of Usui et al., a rejection that contained at least 3 paragraphs, consumed merely 2 sentences).

Applicant's attorney "is concerned by the lack of pertinence that the cited references appear to have for the claimed invention", but no evidence of novelty or unobviousness over the cited references for the instant claims can be found in applicant's response.

The Examiner does not understand applicant's basis for the traversal of Tang et al., since this reference teaches a particle core having a T_g of $< 0^\circ\text{C}$ (see the abstract), meeting the claim 31 limitation "a core with a glass transition temperature below room temperature" and a shell made from monomers having a T_g above room temperature, meeting the claim 31 limitation "an outer shell with a glass transition temperature above room temperature". There is no traversal of this reference as it applies to the silica filled composition of instant claim 42.

The Examiner does not understand applicant's basis for the traversal of Hanyu et al. since it is well established in patent law that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Since each of claimed components a) and b) in claim 42 is present in the composition of Hanyu et al., the composition of claim 42 is anticipated by this reference.

Finally, with respect to applicant's assertion to have been treated unfairly by the Office by citing numerous pieces of art without choosing "one or two most pertinent references", the Examiner only applied *three* references against the claims while paragraph 14 of the previous office action clearly noted that more references *could* have been applied, but weren't. Since the application initially consisted of 30 claims, 4 of them independent, with subject matter ranging from a encapsulant containing a core-shell substance to a silica filled epoxy composition to a method of encapsulating an integrated circuit chip and a substrate, the Examiner is surprised that applicant would consider 3 references to be unfair. In view of the various limitations associated with the 30 different claims, the Examiner cited the minimum number of references necessary to adequately address the patentability of the claims.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret G. Moore whose telephone number is 703-308-4334. The examiner can normally be reached on Mon., Wed., Thurs. and Friday, 10am to 4pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9311 for regular communications and 703-872-9310 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Margaret G. Moore
Primary Examiner
Art Unit 1712

mgm
October 16, 2002